Front Range of Colorado and Southern Wyoming
Fuels and Fire Behavior Advisory

June 25th, 2012

Subject: **Severe fuel conditions and revealed extreme fire behavior across the Front Range of Colorado and Southern Wyoming**

Discussion: Long-term drought conditions exist across the Colorado Front Range and southern Wyoming. Record temperatures resulted in a loss of snowpack approximately a month early, with minimal green-up at higher elevations. Sporadic spring moisture resulted in short-term relief, however, 1000-hour fuel moistures have returned to single-digit values. Sufficient fine-fuels exist from last year that will allow fires to spread through meadows that visually appear "green". Atmospheric and fuel conditions have resulted in both wind driven and plume dominated large fire activity during the last few months that has ensured in most cases destructive large fires.

Ponderosa pine Live Fuel Moisture Content (LFMC) values are between 70 and 90%. Typical values for this time of year are 100-105%. LFMC values of other species are low as well. Fire behavior is expected to transition to crown fire with much lower surface fire flame lengths. Spring fires have exhibited profuse spotting due to receptive fuels. 1000-hour fuel moisture values range from 5-8%. A band of frost-killed and insect-damaged gambel oak has been reported across a large portion of the area. Some areas have LFMC in oak at 105%. High elevations are snow-free and are available to burn. These areas have very high fuel loadings due to blowdown and disease infested stands.

RAWS currently show live fuel moisture in Wyoming big sagebrush well below the previous historical low of 168% for this time of year. Fuel moistures are low enough to support critical fire spread as fire behavior has been observed at the 9000+ elevation levels. The majority of ERC values across the area of concern are well above the 97 percentile - this momentous trend is expected to continue.

Drought conditions persist in the area of concern – a carry-over from 2011. Drought indices continue to intensify with "Severe" and "Extreme" categories across the Front Range of Colorado and southern Wyoming -drought indices are approaching values similar to the conditions that were present for the same time in 2002. Temperatures through the period of March through June were well above average. Over 90% of all acres burned in this area of concern occur during the next three months. With persistent drought conditions, expect fires to spread readily and exhibit high resistance to control.

Concerns to Firefighters and the Public:

- Expect fire to spread in fine fuels based on the conditions mentioned above.
- Anticipate any ignition in flashy fine fuels to ignite easily and move rapidly. **You can't out run it!**
- Anticipate fire whirls in areas with a combination of: heavy fuel loadings in timber, terrain, dry atmospheric conditions and strong surface instability.
- Anticipate large acres to be consumed in a short period of time.
- Fire Behavior will burn the fine flashy fuels leaving some shrub components until the live fuel moisture values drop to about 115% to 120%. **Watch out for re-burn situations!**
- Once the live fuel moisture values fall, flaming fronts will elongate and fires will burn with more intensity and fire behavior will become more extreme.
- Expect fire behavior in the Gambel Oak to increase due to spring frost kill.
- Anticipate fires to exhibit extreme spread rates, elongated flaming fronts, and increased fire brands; **expect more long range spotting.**
- Anticipate dependent and independent crown fires in the insect infested conifer stands.
- Do not be fooled and assume areas of green-up will serve as barriers As LFMC values continue to fall, more intense fire behavior with long-range spotting will become more likely.
- Any activity in beetled killed timber is extremely hazardous. When dealing with fires in these areas it is critical that a hazard mitigation plan is utilized and carried out.
- Fires in early spring and the onset of summer have confirmed conditions. Fires have grown rapidly and have been problematic to manage. Fuels, especially at the lower elevations (5,000 -9,000ft) are expected to burn at 100% of their potential ERCs, coupled with extreme fire behavior.
- Consult the latest RMA Fire Potential: posted at http://gacc.nifc.gov/rmcc/predictive/outlooks.html
- Consult the National Fuel Moisture Database and RMA Pocket Cards: posted at http://gacc.nifc.gov/rmcc/predictive/firedngr.htm
  BOTTOM LINE: Fuels will be very resistant to control and LCES needs to be in place at all times